A. PROCESS

D0E/RL-88-21 216-B-3 Expansi on Ponds Rev. 0, 12/16/93

	or type in the unshaded areas only are spaced for elite type, i.e. 12 character/inch).
FORM	

FORM 3	DANGEROUS WASTE PERMIT APPLICATION    I. EPA/STAT   W   A   7   8									
FOR OFFICIAL	. USE ONLY				,					
APPLICATION APPROVED	C.OMMENTS									
	CLEAN CLOSED, 07/31/95									
II. FIRST OR R	EVISED APPLICA	ATION								
Place an "X" in application. If th I.D. Number in S	nis is your first app	ox in A or B	below (mark one box only) to indicate wh you already know your facility's EPA/ST/	ether this is the first applicat ATE I.D. Number, or if this is	ion you are submitting a revised application,	for your facility or a revised enter your facility's EPA/STATE				
MO. DAY YEAR 10 01 1983			and provide the appropriate date) See instructions for definition of "existing" facility. Complete Item below.)  FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use to boxes to the left)  The date construction of the Hanford Facility							
B. REVISED AF	PPLICATION <i>(pla</i> CILITY HAS AN II	ce an "X" be	commenced.  elow and complete Section I above)  ATUS PERMIT 2. FA	ACILITY HAS A FINAL PERI	MIT					
III. PROCESS -	CODES AND CA	PACITIES								
codes. If me process (inc B. PROCESS  1. AMOUN  2. UNIT OF Only the	ore lines are need cluding its design DESIGN CAPACI T - Enter the amo	led, enter the capacity) in TY - For eac unt. r each amou	the list of process codes below that best a code(s) in the space provided. If a process the space provided on the (Section III-C) ich code entered in column A enter the case of the space provided on the (Section III-C) ich code entered in column B(1), enter the code and below should be used.  APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	ess will be used that is not in a pacity of the process.	ncluded in the list of co	des below, then describe the				
Storage:				Treatment:						
CONTAINER TANK WASTE PILE SURFACE IN Disposal:	MPOUNDMENT	S02 S03 S04	GALLONS OR LITERS GALLONS OR LITERS CUBIC YARDS OR CUBIC METERS GALLONS OR LITERS	TANK SURFACE IMPOUNDMI INCINERATOR	Т03	GALLONS PER DAY OR LITERS PER DAY GALLONS PER DAY OR LITERS PER DAY TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER				
LAND APPLICATION D82 OCEAN DISPOSAL D83 SURFACE IMPOUNDMENT D84		D81 D82 D83	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER ACRES OR HECTARES GALLONS PER DAY OR LITERS PER DAY GALLONS OR LITERS	OTHER (Use for physical chemical, thermal or biol treatment processes not occurring in tanks, surfact impoundments or incined Describe the processes space provided: Section	logical ce rators. in the	HOUR GALLONS PER DAY OR LITERS PER DAY				
UNIT OF ME	ME	NIT OF ASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE				
GALLONS G LITERS L CUBIC YARDS Y CUBIC METERS C GALLONS PER DAY U		LITERS PER DAY TONS PER HOUR METRIC TONS PER HOUR GALLONS PER HOUR LITERS PER HOUR	V D W E H	ACRE-FEET HECTARE-METER ACRES HECTARES	B Q					

hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

B. PROCESS DESIGN CAPACITY

LINE NUMBER	CODE (from list above)	1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY			
X-1	S02	600	G				
X-2	T03	20	E				
1	T02	27,960,000	U				
2	D84	27,960,000	G				
3							
4							
5							
6							
7							
8							
9							
10							

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (CODE "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

#### T02. D84

The 216-B-3 Expansion Ponds (Expansion Ponds) consist of three interconnected ponds called the 216-B-3A (3A) Pond, the 216-B-3B (3B) Pond, and the 216-B-3C (3C) Pond. These ponds were constructed to receive the increased discharges to the 216-B-3 Pond System, which includes the 216-B-3 Main Pond (Main Pond), a separate dangerous waste treatment and disposal unit as a result of the Plutonium Uranium Extraction (PUREX) Plant in 1983 and the decommissioning of the Gable Mountain Pond in 1987. The 3A Pond was placed into service in October 1983 and remains in service today. The 3A Pond receives effluent from the Main Pond through a spillway in the dike separating the two ponds. A similar spillway allowed the 3B Pond, which was operational from June 1984 to May 1985 to receive effluent from the 3A Pond. The 3A and 3B Ponds each cover an area of approximately 11 acres (4.4 hectares). The 3C Pond began operation in 1985 and is still in service today. The 3C Pond was constructed by excavating 6 feet (1.8 meters) of soil over the 41-acre (16-hectare) surface area. A spillway similar to the ones used for the 3A and 3B Ponds conveys effluent from the 3A Pond to the 3C Pond.

Waste water (primarily process and cooling water) from the PUREX Plant, the B Plant Complex, the 242 -A Evaporator, and other 200 East Area units is received from the expansion ponds through the Main Pond. The Expansion Ponds received corrosive waste as a result of the regeneration of the PUREX Plant demineralizer columns (D84). Treatment of the waste occurred by the successive discharge of acidic and caustic waste, which served to neutralize the corrosivity of the waste before and upon reaching the Expansion ponds. Residual corrosivity was neutralized by the calcareous nature of the Expansion ponds soil (T02).

The process design capacities given for the waste process codess T02 [27,960,000 gallons (105,840,000 liters) per day] and D84 [27,960,000 gallons (105,840,000 liters)] represent the Expansion Ponds proportional share (based on percolation capacity) of the process design capacity of the entire B Pond System. At the peak of operations, approximately 22,000,000 gallons (83,280,000 liters) per day of liquid was discharged to the entire 216-B-3 Pond System. Presently, approximately 1,500 gallons (5,678 liters) to 6,000 gallons (22,712 liters) per minute of nondangerous liquid effluent are being sent to the 216-B-3 Pond System.

Construction was begun on a new pipeline in 1990 that will allow waste water to bypass the 216-B-3 Main Pond and discharge directly to the Expansion

#### IV. DESCRIPTION OF DANGEROUS WASTES

- A. DANGEROUS WASTE NUMBER Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describe the characteristics and/or the toxic contaminants of those dangerous wastes.
- B. ESTIMATED ANNUAL QUANTITY For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. UNIT OF MEASURE For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

  ENGLISH UNIT OF MEASURE CODE

  METRIC UNIT OF MEASURE CODE

POUNDS P KILOGRAMS K
TONS T METRIC TONS M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

### D. PROCESSES

#### 1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

- 1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- 2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.
- 3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

L	A. DANGEROUS		C. UNIT	D. PROCESSES				
NO E.	WASTE NO.	B. ESTIMATED ANNUAL QUANTITY OF WASTE	MEA-		1. PROCESS CODES (enter)			PROCESS DESCRIPTION     (if a code is not entered in D(1))
X-1	K054	900	P	T03 D80				
X-2	D002	400	P	T03	D80			
X-3	D001	100	P	T03	D80			
X-4	D002			T03	D80			included with above
1	D002	117,200,000	Р	T02	D84			Neutralization/Percolation
2	WT02	2,573,000	Р	T02	D84			Neutralization/Percolation
3	U133	1,478,000	Р	T02	D84			Neutralization/Percolation
4	WT01	484,000	Р	T02	D84			Neutralization/Percolation
5	D006	149,000	Р	T02	D84			Neutralization/Percolation
6								
7								
8								
9								
10								

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

from the regeneration of demineralizer columns at the PUREX Plant, and (2) spills of dangerous or mixed waste at the PUREX Plant. Backwash from the regeneration of the demineralizer columns was frequently corrosive (D002) and sometimes contained toxic concentrations of chemicals used in the regeneration process, including nitric acid, sulfuric acid, sodium hydroxide, and potassium hydroxide (WT02). Spills at the PUREX Plant included hydrazine (U133), cadmium nitrate (WT01/D006), and ammonium fluoride/ammonium nitrate (WT01). Since 1984, administrative and engineering barriers have been put in place at the PUREX Plant to prevent dangerous waste from being discharged into the Expansion ponds.

The quantity of waste listed for D002/WT02 is an estimated annual quantity based on the Expansion Ponds proportional share (based on percolation capacity) of the amount of corrosive and toxic dangerous waste received by the entire 216-B-3 Pond System (which includes the 216-B-3 Main Pond, a separate dangerous waste treatment and disposal unit). The quantities of waste listed for U133 and WT01/D006 represent the Expansion Ponds' proportional share (based on percolation capacity) of the total recorded amount of hydrazine, cadmium, and ammonium fluoride/ammonium nitrate received by the entire B Pond System from the time the PUREX Plant resumed operations in 1983 until the last known chemical discharge occurred in 1987.

The quantities of waste listed for U133 and WT01/D006 include the water in which the chemicals were discharged. Water makes up most of the weight of these discharges.

### V. FACILITY DRAWING Refer to attached drawing(s).

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

## VI. PHOTOGRAPHS Refer to attached photograph(s).

All existing facilities must include photographs (arial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

## VII. FACILITY GEOGRAPHIC LOCATION This information is provided on the attached drawing(s) and photograph(s).

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)				

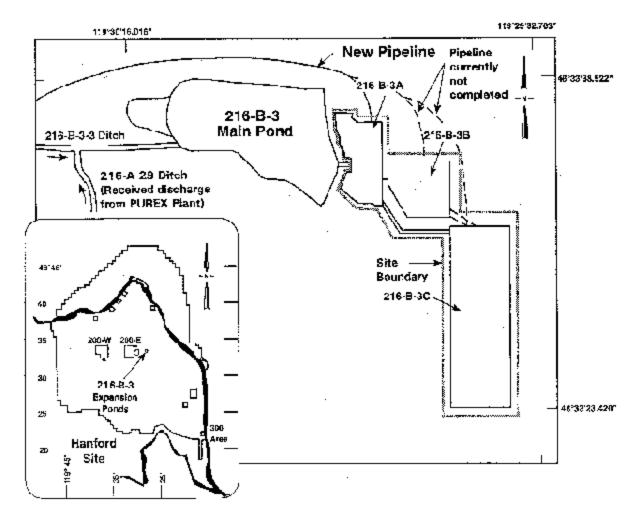
VIII							
VIII. FACILITY OWNER							
A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.  B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:							
1. NAME OF FACILITY'S LEGAL OWNER 2. PHONE NO. (area code & no.)							
3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE				
IX. OWNER CERTIFICATION							
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.							
NAME (print or type)	SIGNATURE	DATE SIGNED					
John D. Wagoner, Manager U.S. Department of Energy Richland Operations Office	John D. Wagoner	12/16/1993					
X. OPERATOR CERTIFICATION							
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.							
NAME (print or type)	SIGNATURE	DATE SIG	NED				
SEE ATTACHMENT							

## X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

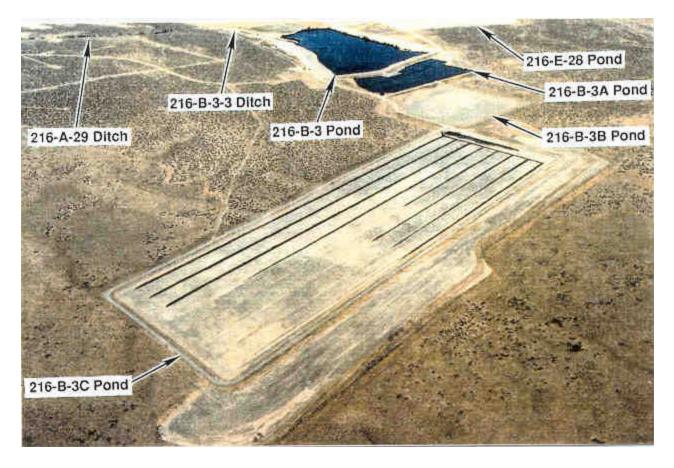
John D. Wagoner	12/16/93
Owner/Operator	Date
John D. Wagoner, Manager	
U.S. Department of Energy	
Richland Operations Office	
Thomas M. Anderson	<u>12/1/93</u>
Co-Operator	Date
Thomas M. Anderson, President	
Westinghouse Hanford Company	

# 216-B-3 Expansion Ponds



39307078.2

# 216-B-3 Expansion Ponds



46°33'38.522" 46°33'23.420" 119°30'16.016" 119°29'32.703"

93110825-1CN (PHOTO TAKEN 1993)